



F-35 Lightning II Program

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'WORKHORSE' BECOMES FIRST F-35 TO ACHIEVE 1,000 FLIGHT HOURS

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EDWARDS AIR FORCE BASE, Calif. -- AF-2, the second production F-35 Lightning II for the Air Force, became the first F-35 to reach 1,000 flight hours June 11.

Paul Hattendorf, a Lockheed Martin test pilot, was flying an airframe loads envelope expansion mission when the fighter reached the milestone.

"AF-2's nickname is 'Workhorse,'" said Randy Thompson, the F-35 Integrated Test Force, government air vehicle lead. "It continues to carry the Flight Sciences testing load, executing its primary mission of loads envelope expansion. Every AF-2 flight-test hour moves the JSF (Joint Strike Fighter) enterprise closer to providing our warriors with the Air Force Initial Operational Capability (IOC) and final system development and demonstration maneuvering envelopes."

Thompson added that data collected from all Flight Sciences aircraft help refine the airframe usage spectrum, which in turn allows for a more accurate fleet life determination.

"AF-2 is the 'Pull Gs jet,'" Thompson said. "It was the first aircraft to hit + 9 G and -3 G and to roll at design-load factor. In addition, AF-2 is the first F-35A to intentionally fly in significant airframe buffet at all angles of attack."

Both AF-2 and AF-1 ferried to Edwards Air Force Base, Calif., from the Lockheed Martin plant in Fort Worth, Texas, May 17, 2010.

Thompson said AF-2 has specific instrumentation and was calibrated for in-flight loads measurements prior to ferrying to Edwards AFB. In addition, it is instrumented to execute airframe buffet testing; landing, braking and arresting hook testing; and ground and in-flight gun testing.

The Lightning II software has 24 million lines of code, which is continually being updated and improved. The ITF team, AF-2 and the rest of the Edwards AFB F-35 test fleet, continues to get closer in getting the world's most advanced fighter into the hands of the warfighter.

"The entire F-35 Edwards ITF team and the 412th Training Wing are pressing hard to complete testing required for the 2B fleet release (Marine Corp IOC mission systems software release and Air Force IOC maneuvering envelope release)," Thompson said. "As aircraft compete their slated 2B testing, the team moves ahead with testing required for the final SDD clearances. Post 2B testing milestones include putting the final SDD talons on the Lightning II with the first flight of the small diameter bomb, first gun fire and continued external GBU-12 envelope expansion, as well as beginning to test the final SDD mission systems suite," Thompson said.

The planned time frame for the Air Force IOC of its F-35As is August 2016.



Paul Hattendorf, a Lockheed Martin test pilot, flies AF-2, the second production F-35 Lightning II for the Air Force, during an airframe loads envelope expansion mission June 11, 2014, over Edwards Air Force Base, Calif. During the test mission, AF-2 became the first F-35 to reach 1,000 flight hours. (Lockheed Martin photo/Tom Reynolds)